REMARKS

This is responsive to the Non-Final Office Action mailed June 20, 2006. In that Office Action, claims 1-4, 6-10, and 14-20 were rejected under 35 U.S.C. § 103(a) as unpatentable over Fuke et al., U.S. Patent No. 6,062,795 ("Fuke") in view of Nakamura, U.S. Patent No. 6,236,904 ("Nakamura") and De Anda, U.S. Patent No. 4,754,867 ("De Anda"). Claims 11-13 were rejected under 35 U.S.C. § 103(a) as unpatentable over Fuke in view of Nakamura and De Anda as applied to claim 10 above, and further in view of Aoki et al., U.S. Patent No. 5,520,276 ("Aoki").

With this Response, claims 1 and 10 have been amended, and claims 21 and 22 are newly presented. Claims 1-4 and 6-22 remain pending in the application and are presented for consideration and allowance.

35 U.S.C. § 103 Rejections

Claims 1-4, 6-10, and 14-20 were rejected under 35 U.S.C. § 103(a) as unpatentable over Fuke in view of Nakamura and De Anda, and claims 11-13 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Fuke in view of Nakamura and De Anda as applied to claim 10 above, and further in view of Aoki.

Fuke teaches a wafer ring feeding apparatus including a wafer ring cassette 10, a pick up device 20, and a wafer ring guide means 80. With reference to FIG. 2, the guide means 80 is attached to the pick up device 20, and an elevator 14 is provided to move the cassette 10 vertically relative to the pick up device 20 and the guide means 80.

Fuke teaches at column 4, lines 33-56, and with reference to FIG. 4a, that the wafer ring guide means 80 includes a central supporting plate 83, and a pair of guide rail supporting plates 85A and 85B disposed on either side of the supporting plate 83 that slide along a shaft 82. Fuke teaches at column 4, lines 50-52 that guide rails 86A and 86B (having conveying surfaces 86a and 86b) are fastened to the guide rail supporting plates 85A and 85B to support and guide side edge portions of a wafer ring

1. In this regard, Fuke teaches at column 4, lines 14-20 that air cylinders 87A and 87B are employed to move guide rails 86A and 86B apart relative to supporting plate 83.

Nakamura teaches a substrate conveying system that includes a wafer hand 2 for grasping a wafer 3 as the wafer 3 is conveyed into and out of a wafer carrier 8. FIG. 1 shows the wafer carrier 8 movable relative to the wafer hand 2, and FIG. 4 shows the wafer hand 2 movable relative to the wafer carrier 8. In general, Nakamura teaches a sensor light projecting means 9, a sensor light receiving means 10, and a scan guide 12 that are useful to detect flexure of the wafer 3 as it is conveyed into and out of a wafer carrier 8.

De Anda teaches a belt-drive PC board feed apparatus 10 that includes a frame 20 and a feeder assembly 58A. The feeder assembly 58A includes an upper roller support bracket 116 and a cylinder support bracket 118. De Anda teaches at column 4, lines 49-55 that idler rollers 130 are coupled to and positioned along a length of the upper roller support bracket 116. In a similar manner, a support rail 32A includes a similar set of idler rollers 132. De Anda teaches at column 5, lines 13-63 that a drive shaft 100 drives the variety of rollers 102 in conveying a PC board (39, 41, 43, 45, and/or 47) along a drive belt 104 of the feeder assembly 58A.

The Office Action mailed June 20, 2006 concedes that Fuke does not show moving a frame support relative to a cassette, and that Fuke does not show contact elements that are separated from one another. The Office Action concludes that it would have been obvious for one of ordinary skill in the art to modify Fuke to include a frame support that is vertically movable relative to a stationary cassette, as suggested by Nakamura, and that it would have been obvious to one of ordinary skill in the art to modify Fuke to include spaced apart contact elements, such as the rollers 103, 132 taught in De Anda. The claims of the pending invention distinguish over the cited references on the following grounds.

To establish a *prima facie* case of obviousness, all three of these basic criteria must be met: first, there must be some suggestion or motivation to modify or combine

the reference teachings; second, there must exist a reasonable expectation of success; and third, the references must teach or suggest all of the claim limitations. MPEP § 2143.

With this response, independent claim 1 has been amended to provide a film frame handling station including a frame support including opposing support arms, each support arm including a first contact element and a second contact element spaced apart from the first contact element, where the first and second contact elements are movable relative to the support arm. Independent claim 10 has been amended to provide a method of handling a film frame including providing a handling system including a load port, a robot end effector, and a vertically adjustable frame support having opposing support arms, each support arm including a plurality of spaced apart contact elements; and moving the contact elements relative to a respective one of the support arms.

The Office Action mailed June 20, 2006 interprets the wafer ring guide means 80 taught in Fuke to be a frame support, and the guide rail supporting plates 85A and 85B to be support arms. Fuke teaches at column 4, lines 49-52 that guide rails 86A and 86B are **fastened** to the guide rail supporting plates 85A and 85B. De Anda teaches rollers 130, 132 that are pinned in place along an assembly 58A, and a support bracket 118, respectively.

It is believed that no suggestion or motivation exists to modify the wafer ring feeding apparatus of Fuke (that accesses one wafer at a time in the cassette 10) according to the automated belt drive for PC boards taught in De Anda. However, even if the cited references are combined, the references, alone or in combination, fail to teach or suggest a frame support including opposing support arms, where each support arm includes contact elements that are movable relative to the support arm, as required by amended independent claims 1 and 10. Consequently, a *prima facie* case of obviousness cannot be established since the references fail to teach or suggest all claim limitations.

In addition, Fuke teaches at column 4, lines 50-52 that the pair of guide rails 86A and 86B guide **both side edge portions** of the wafer ring 1. The Office Action takes the position that it would have been obvious to modify the guide rails 86A, 86B and conveying surfaces 86a, 86b taught in Fuke to include the rollers 130, 132 taught in De Anda. However, it is respectfully submitted that this purported modification would result in the guide rails 86A and 86B of Fuke including rollers that would not be suited to guide both side edge portions of a wafer ring as required by Fuke. That is to say, Fuke teaches that the guide rails 86A, 86B guide the side edges of the wafer ring 1, and the rollers 130, 132 taught in De Anda would at most roll along a top/bottom surface, and thus fail to guide the edges of the wafer ring 1. In this regard, the purported modification would render Fuke unsatisfactory for its intended purpose of guiding the edge portions of the wafer ring 1. Consequently, it is believed that the purported modification fails to have a reasonable expectation of success, such that a *prima facie* case of obviousness cannot be established.

With regard to claim 9, the Office Action mailed June 20, 2006 takes the position at the bottom of page 4 and the top of page 5 that a spring-loaded roller is merely a design expediency since applicant has not disclosed that such a roller "solves any particular problem." Applicant respectfully disagrees. The specification at page 5, line 28 to page 6, line 12 describes how the contact elements are adjustable to accommodate film frame width and sagging as a film frame is moved relative to a cassette. A spring-loaded roller is just one way in which the present invention teaches improved film frame handling that reduces cross feeding, miss-feeding, and damaged wafers. None of the cited references teach or suggest spring-loaded rollers, as required by claim 9, such that it is believed that claim 9 further defines patentably distinct independent claim 1.

It is believed that amended independent claims 1 and 10 are non-obvious under 35 U.S.C. § 103, such that claims that depend from independent claims 1 and 10 must also therefore be non-obvious. MPEP § 2143.03.

New Claims

Claims 21 and 22 are newly presented to particularly point out and distinctly claims subject matter that is believed to be patentable over the cited references. Support for the language of claims 21 and 22 is located throughout the specification and the drawings, and in particular at page 5, lines 15-22. No new matter has been added. It is believed that new claims 21 and 22 further define patentably distinct independent claim 1.

CONCLUSION

In view of the above, Applicant respectfully submits that pending claims 1-4 and 6-22 recite patentable subject matter, are in form for allowance, and are not taught or suggested by the cited references. Therefore, reconsideration and withdrawal of the rejections and allowance of claims 1-4 and 6-22 is respectfully requested.

A $50.00 fee is required under 37 C.F.R. § 1.16(i) for one claim in access of 20. The Patent Office is hereby authorized to charge Deposit Account No. 50-0471 for this and other required fees.

The Examiner is invited to telephone the Applicant's representative at the below-listed number to facilitate prosecution of this application.

Any inquiry regarding this Amendment and Response should be directed to Timothy A. Czaja at Telephone No. (612) 573-2004, Facsimile No. (612) 573-2005. In addition, all correspondence should continue to be directed to the following address:

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